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TUNGSTEN.

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A Few Notes on the Ores of Tungsten, their Occurrence, Commercial Value, Price and demand:—

Tungsten has been until recently considered one of the rare metals, but during the last few years has become generally useful. It is attracting much attention as an article of commerce, being much in demand by iron masters, dyers, silk manufacturers, and the manufacturers of tungsten lamps.

Its name is derived from two Swedish words, which mean heavy stone; being nearly as heavy as gold.

Being hard to fuse, it is an ideal metal from which to make filaments for electric lamps. It is principally used in the production of tungsten steel, tungsten high-speed tool steel, armour plate, and armour piercing projectiles. It is also largely used in giving weight to silk goods, and in fireproofing cotton materials.

The Ores of Tungsten.—Wolframite, is black, sometimes brownish black, is very heavy, having a specific gravity of 7, and was recognized by the miners of Cornwall in the middle ages. Chemically it is a tungstate of iron and manganese.

Hübnerite.—Somewhat resembles wolframite, being a tungstate of manganese.

Scheelite.—This is the chief ore of tungsten, and is a tungstate of calcium. It has a specific gravity of 6. In colour it is white, cream, yellow, and sometimes light brown.

Tungstite, is the decomposed product of both wolframite and scheelite, and is of a bright golden yellow.

Occurrence.—Tungsten is usually found in quartz veins in the form of wolframite or scheelite associated with sulphides, pyrite, galena, &c, and sometimes with the ores of tin.

It is found associated with scheelite, imbedded in quartz veins in the crystalline rocks, and is widely distributed in nature, but its occurrence in commercial quantities are not frequent.

Production.—It is only within the last few years tungsten has been recognized as an important element in the commercial world. Prior to the year 1900, only a small quantity was required in the industries. The discovery of its advantage in the manufacture of tungsten steel and stimulated its production. Prices have advanced rapidly and even with the increase consumers found it difficult to secure sufficient quantity to meet their requirements.

In 1905 the United States government awoke to a full realization of the importance of having tungsten produced with its own borders in quantities sufficient

to satisfy the commercial demand; as is evidenced by a special report made by Mr. Joseph Hyde Pratt to the United States geological survey during that year, in which he says: A reliable and constant supply of tungsten mineral is desirable and of considerable importance considering the large increase in demand for the metal tungsten, for use in the manufacture of high speed tool steel and the hardening of steel for armour plate and heavy guns. The demand for this metal is increasing rapidly and there is now a regular market for it in this country and abroad. At the present time there is but one district in the United States that is being developed as a business proposition, and that is in Boulder County, Colorado.

Mineral Resources of the United States for 1906 gives the world's production as follows:—

	1906		1905	
	Short tons	Value \$	Short tons	Value \$
Great Britain			193	55,271
N. South Wales	271	81,349	251	85,000
Queensland	892	322,400	1,582	487,688
S. Australia			71	16,466
Tasmania	22	7,130	36	11,540
N. Australia	95	33,977		
New Zealand			64	22,400
Rhodesia	17	7,399		
Austria			65	20,418
Bolivia			75	25,250
France			28	11,448
Germany			42	16,184
Saxony			37	12,437
Portugal			320	99,413
Spain			413	32,111
United States	928	348,867	803	268,676
Other countries			20	7,000
Total			4,000	1,172,372

Production in the United States from 1900 to 1906 in tons of 2000 lbs.

Year	Tons	Value per ton.
1900	46	\$11,040
1901	179	27,720
1902	184	33,112
1903	292	43,639
1904	740	184,000
1905	834	257,436
1906	1,096	443,150

The following table shows the world's production of tungsten ore during 1907 by countries, estimated in short tons of concentrates containing 60 per cent. of tungsten trioxide.